

Refine Search

Search Results -

Terms	Documents
L8 and 562/\$	14

Database:

US Pre-Grant Publication Full-Text Database
 US Patents Full-Text Database
 US OCR Full-Text Database
 EPO Abstracts Database
 JPO Abstracts Database
 Derwent World Patents Index
 IBM Technical Disclosure Bulletins

Search:

L9

Search History

DATE: Wednesday, May 09, 2007 [Purge Queries](#) [Printable Copy](#) [Create Case](#)

Set Name Query

side by side

Hit Count Set Name

result set

DB=PGPB,USPT,USOC,EPAB,JPAB,DWPI,TDBD; PLUR=YES; OP=ADJ

<u>L9</u>	L8 and 562/\$	14	<u>L9</u>
<u>L8</u>	L7 and (v or mo or w)	82	<u>L8</u>
<u>L7</u>	L6 and (p or si)	86	<u>L7</u>
<u>L6</u>	L5 and (carbon monoxide or co)	91	<u>L6</u>
<u>L5</u>	L4 and heteropoly\$9	97	<u>L5</u>
<u>L4</u>	L3 and (heteropoly acid or heteropolyacid)	97	<u>L4</u>
<u>L3</u>	L2 and benzene and (pd or palladium)	18545	<u>L3</u>
<u>L2</u>	ANISIC ACID OR TOIUIIC ACID or benzoic acid	111062	<u>L2</u>

DB=PGPB; PLUR=YES; OP=ADJ

<u>L1</u>	20040171871	1	<u>L1</u>
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END OF SEARCH HISTORY

Hit List

[First Hit](#)[Clear](#)[Generate Collection](#)[Print](#)[Fwd Refs](#)[Bkwd Refs](#)[Generate OACS](#)

Search Results - Record(s) 1 through 10 of 14 returned.

☐ 1. Document ID: US 20060281629 A1

L9: Entry 1 of 14

File: PGPB

Dec 14, 2006

PGPUB-DOCUMENT-NUMBER: 20060281629

PGPUB-FILING-TYPE:

DOCUMENT-IDENTIFIER: US 20060281629 A1

TITLE: Catalyst comprising N-substituted cyclic imide compound and process for producing organic compound using the catalyst

PUBLICATION-DATE: December 14, 2006

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY
Ishii; Yasutaka	Osaka		JP
Nakano; Tatsuya	Himeji-shi		JP
Iwahama; Takahiro	Himeji-shi		JP
Hirai; Naruhisa	Himeji-shi		JP

US-CL-CURRENT: [502/167](#); [562/415](#), [562/599](#)

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KIMC	Draw D
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☐ 2. Document ID: US 20050192461 A1

L9: Entry 2 of 14

File: PGPB

Sep 1, 2005

PGPUB-DOCUMENT-NUMBER: 20050192461

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20050192461 A1

TITLE: Polyoxometallate catalysts and catalytic processes

PUBLICATION-DATE: September 1, 2005

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY
Davis, Mark E.	Pasadena	CA	US
Dillon, Christopher J.	San Rafael	CA	US
Holles, Joseph H.	Houghton	MI	US
Labinger, Jay A.	Claremont	CA	US

US

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KUMC	Draw. De
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Sep 2, 2004

DOCUMENT-IDENTIFIER: US 20040171871 A1

JP

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KMC	Draw	De
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Jul 31, 2003

DOCUMENT-IDENTIFIER: US 20030144550 A1

US

US-CL-CURRENT: 562/545; 502/208, 502/209, 502/210, 502/211, 562/549, 585/652

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KMOC	Draw. De
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☐ 5. Document ID: US 7115541 B2

L9: Entry 5 of 14

File: USPT

Oct 3, 2006

US-PAT-NO: 7115541

DOCUMENT-IDENTIFIER: US 7115541 B2

TITLE: Catalyst comprising n-substituted cyclic imides and processes for preparing organic compounds with the catalyst

PRIOR-PUBLICATION:

DOC-ID

DATE

US 20030013603 A1

January 16, 2003

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KMOC	Draw. De
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☐ 6. Document ID: US 7019179 B2

L9: Entry 6 of 14

File: USPT

Mar 28, 2006

US-PAT-NO: 7019179

DOCUMENT-IDENTIFIER: US 7019179 B2

TITLE: Process for producing aromatic compounds

PRIOR-PUBLICATION:

DOC-ID

DATE

US 20030171625 A1

September 11, 2003

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KMOC	Draw. De
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☐ 7. Document ID: US 7019165 B2

L9: Entry 7 of 14

File: USPT

Mar 28, 2006

US-PAT-NO: 7019165

DOCUMENT-IDENTIFIER: US 7019165 B2

TITLE: Polyoxometallate catalysts and catalytic processes

PRIOR-PUBLICATION:

DOC-ID

DATE

US 20050192461 A1

September 1, 2005

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KMOC	Draw D
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☐ 8. Document ID: US 6914029 B2

L9: Entry 8 of 14

File: USPT

Jul 5, 2005

US-PAT-NO: 6914029

DOCUMENT-IDENTIFIER: US 6914029 B2

TITLE: Polyoxometallate catalysts and catalytic processes

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KMOC	Draw D
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☐ 9. Document ID: US 6515171 B1

L9: Entry 9 of 14

File: USPT

Feb 4, 2003

US-PAT-NO: 6515171

DOCUMENT-IDENTIFIER: US 6515171 B1

TITLE: Process for separating an oxidation reaction product and an oxidation catalyst

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KMOC	Draw D
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☐ 10. Document ID: US 6444843 B1

L9: Entry 10 of 14

File: USPT

Sep 3, 2002

US-PAT-NO: 6444843

DOCUMENT-IDENTIFIER: US 6444843 B1

**** See image for Certificate of Correction ****

TITLE: Producing method of (hydroxyalkyl) alicyclic carboxylic acids and intermediates for producing the same and producing method of such intermediates

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KMOC	Draw D
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Clear	Generate Collection	Print	Fwd Refs	Bkwd Refs	Generate OACS
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Terms	Documents
L8 and 562/\$	14

Display Format:

Hit List

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Search Results - Record(s) 11 through 14 of 14 returned.

☐ 11. Document ID: US 6392104 B1

L9: Entry 11 of 14

File: USPT

May 21, 2002

US-PAT-NO: 6392104

DOCUMENT-IDENTIFIER: US 6392104 B1

TITLE: Adamantane derivatives and process for producing them

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KWIC	Draw D
------	-------	----------	-------	--------	----------------	------	-----------	-----------	-------------	--------	------	--------

☐ 12. Document ID: US 5981420 A

L9: Entry 12 of 14

File: USPT

Nov 9, 1999

US-PAT-NO: 5981420

DOCUMENT-IDENTIFIER: US 5981420 A

TITLE: Oxidation catalytic system and oxidation process

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KWIC	Draw D
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☐ 13. Document ID: US 5962680 A

L9: Entry 13 of 14

File: USPT

Oct 5, 1999

US-PAT-NO: 5962680

DOCUMENT-IDENTIFIER: US 5962680 A

TITLE: Processes for producing epsilon caprolactams

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KWIC	Draw D
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☐ 14. Document ID: US 5760288 A

L9: Entry 14 of 14

File: USPT

Jun 2, 1998

US-PAT-NO: 5760288

DOCUMENT-IDENTIFIER: US 5760288 A

TITLE: Process for producing aromatic carboxylic acid

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KMC	Draw D
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Clear	Generate Collection	Print	Fwd Refs	Bkwd Refs	Generate OACS
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Terms	Documents
L8 and 562/\$	14

Display Format:

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L13 STRUCTURE UPLOADED

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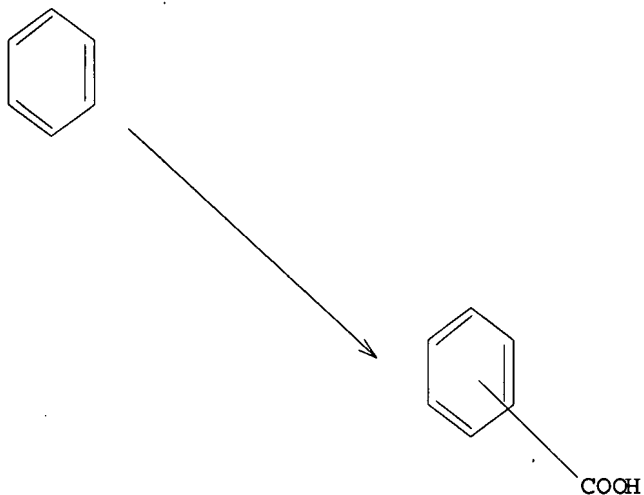
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L14 STRUCTURE UPLOADED

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L14 HAS NO ANSWERS

L14 STR



Structure attributes must be viewed using STN Express query preparation.

d his

(FILE 'HOME' ENTERED AT 15:06:00 ON 09 MAY 2007)

FILE 'CASREACT' ENTERED AT 15:06:21 ON 09 MAY 2007

L1 STRUCTURE UPLOADED
L2 47917 S L FULL
L3 5968 S L1 FULL
L4 460 S L3 AND (CO OR CARBON MONOXIDE)
L5 47 S L4 AND OXYGEN
L6 26 S L5 AND PY<2003
L7 0 S HETEROPOLYACID AND L4
L8 0 S HETEROPOLY ACID AND L4
L9 52 S L3 AND (CARBON MONOXIDE)
L10 3 S L9 AND OXYGEN
L11 1 S HETEROPOLYACID AND L3
L12 5 S HETEROPOLY ACID AND L3

FILE 'CASREACT' ENTERED AT 15:20:20 ON 09 MAY 2007

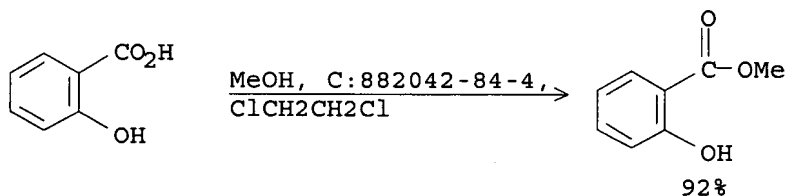
L13 STRUCTURE UPLOADED
L14 STRUCTURE UPLOADED
L15 8168 S L14 FULL
L16 37 S L15 AND CARBON MONOXIDE
L17 12 S L15 AND (HETEROPOLY ACID OR HETEROPOLYACID)
L18 1 S L17 AND (OXYGEN OR O2)
L19 1 S L17 AND PY<2003

=>

=> d 117 1-12

L17 ANSWER 1 OF 12 CASREACT COPYRIGHT 2007 ACS on STN

RX(1) OF 98



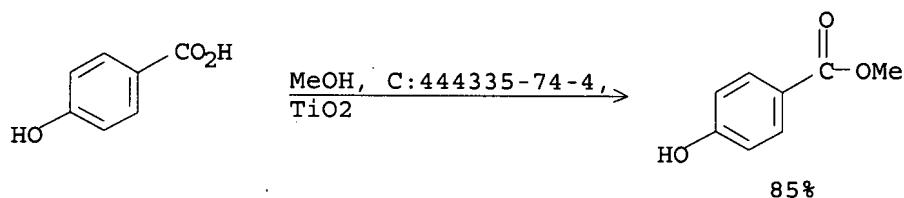
REF: Applied Catalysis, A: General, 302(1), 42-47; 2006

NOTE: alternative reaction conditions gave lower yield, green chem.-catalyst, optimization study, optimized on time, temperature, catalyst

CON: 4 hours, reflux

L17 ANSWER 2 OF 12 CASREACT COPYRIGHT 2007 ACS on STN

RX(1) OF 4



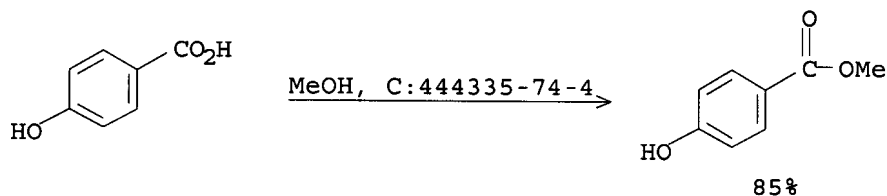
REF: Shenyang Huagong Xueyuan Xuebao, 19(2), 81-83, 96; 2005

NOTE: green chemistry, green chemistry-catalyst, TiSiW12O40/TiO₂ used as catalyst, other catalysts give lower yield, optimization study, optimized on ratio of reactants, amount of catalyst and time, scalable

CON: 6 hours, reflux

L17 ANSWER 3 OF 12 CASREACT COPYRIGHT 2007 ACS on STN

RX(1) OF 1



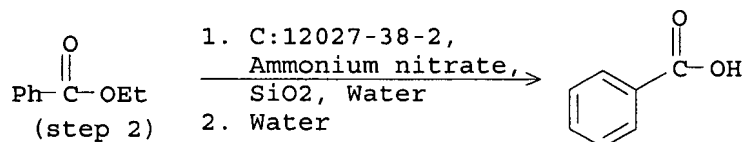
REF: Shenyang Huagong Xueyuan Xuebao, 19(1), 8-10; 2005

NOTE: solid-supported catalyst, TiO₂ used, optimization study, optimized on ratio of reactants, amount of catalyst and time

CON: 5 hours, reflux

L17 ANSWER 4 OF 12 CASREACT COPYRIGHT 2007 ACS on STN

RX(3) OF 6

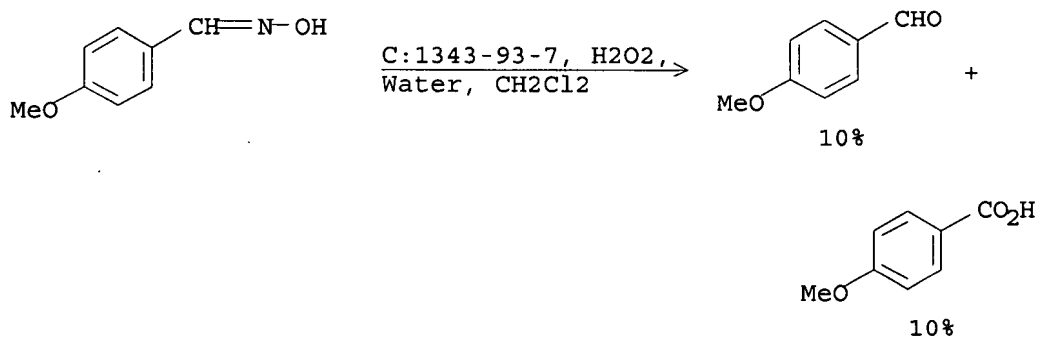


REF: Faming Zhuanli Shenqing Gongkai Shuomingshu, 1541991, 03 Nov 2004

CON: STAGE(1) 40 minutes, room temperature
STAGE(2) 2 hours, 100 deg C

L17 ANSWER 5 OF 12 CASREACT COPYRIGHT 2007 ACS on STN

RX(35) OF 41



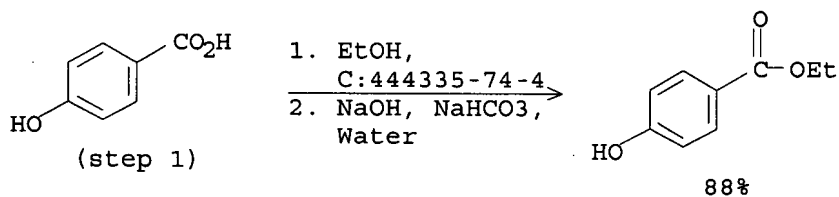
REF: Tetrahedron Letters, 46(15), 2599-2602; 2005

NOTE: product depends on the reaction conditions

CON: 24 hours, room temperature

L17 ANSWER 6 OF 12 CASREACT COPYRIGHT 2007 ACS on STN

RX(1) OF 3



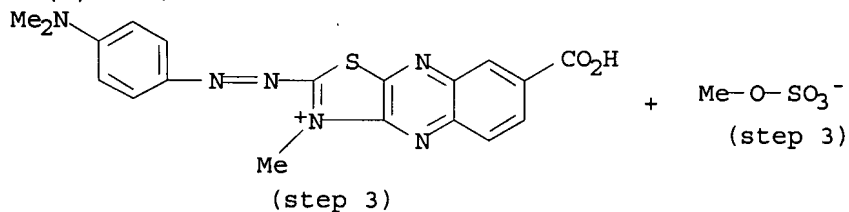
REF: Xiyou Jinshu Cailiao Yu Gongcheng, 32(12), 1033-1036; 2003

NOTE: optimization study

CON: STAGE(1) 2 hours, 84 - 86 deg C
STAGE(2) pH 7 - 8

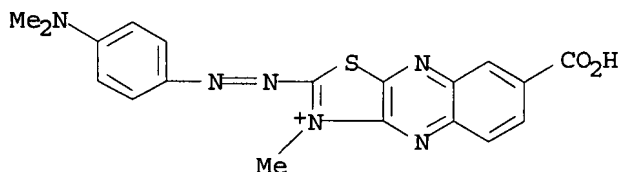
L17 ANSWER 7 OF 12 CASREACT COPYRIGHT 2007 ACS on STN

RX(3) OF 8



1. Na₂WO₄, Na₂HPO₄,
HCl, Water
2. Zn
3. Water

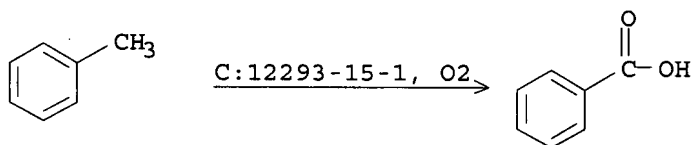
MULTI
PAGE +
IMAGE
12534-77-9



REF: Revista de Chimie (Bucharest, Romania), 55(4), 269-272; 2004
CON: room temperature, pH 1.15 - 1.20

L17 ANSWER 8 OF 12 CASREACT COPYRIGHT 2007 ACS on STN

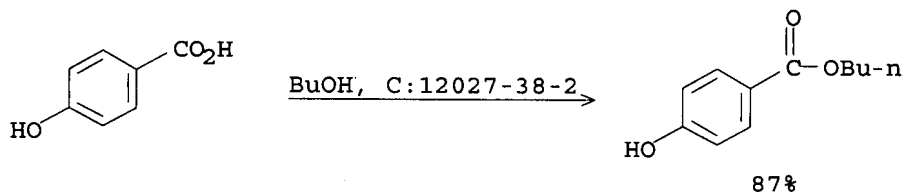
RX(1) OF 2



REF: Kinetics and Catalysis (Translation of Kinetika i Kataliz), 45(4), 578-579; 2004
NOTE: Solid-supported catalyst, Other product also detected, catalyst is supported on ShAS-2 bead aluminosilicate, optimized on temperature and space velocity, conversion is 6.00%, space velocity is 2000 per hour
CON: 300 deg C, 1 atm

L17 ANSWER 9 OF 12 CASREACT COPYRIGHT 2007 ACS on STN

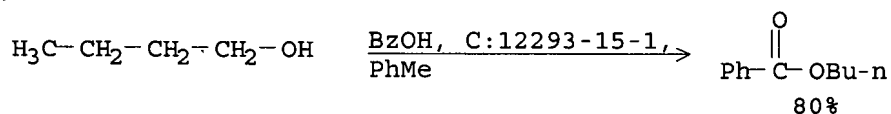
RX(1) OF 1



REF: Jingxi Shiyou Huagong, (1), 35-37; 2003
NOTE: optimization study
CON: 4 hours, 110 - 130 deg C

L17 ANSWER 10 OF 12 CASREACT COPYRIGHT 2007 ACS on STN

RX(1) OF 1



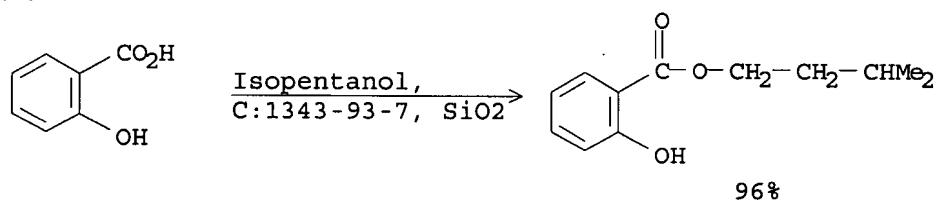
REF: Jingxi Huagong, 20(8), 478-480; 2003

NOTE: optimization study, Keggin P-Mo-V heteropolyacid used as catalyst

CON: 2 hours, 110 - 115 deg C

L17 ANSWER 11 OF 12 CASREACT COPYRIGHT 2007 ACS on STN

RX(1) OF 1



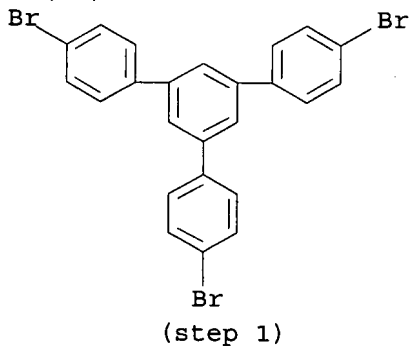
REF: Jingxi Huagong Zhongjianti, 32(3), 21-22; 2002

NOTE: optimization study

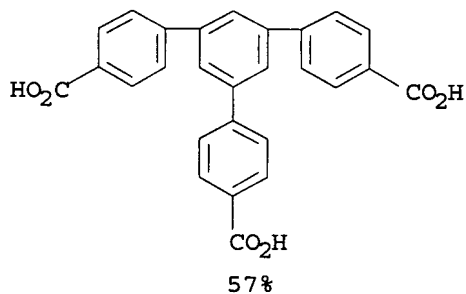
CON: 2 hours, reflux

L17 ANSWER 12 OF 12 CASREACT COPYRIGHT 2007 ACS on STN

RX(34) OF 56



1. BuLi, THF, Hexane
2. CO₂
3. AcOH, Water



REF: Journal of the American Chemical Society, 126(3), 884-890; 2004
CON: STAGE(1) room temperature -> -60 deg C
STAGE(2) -60 deg C

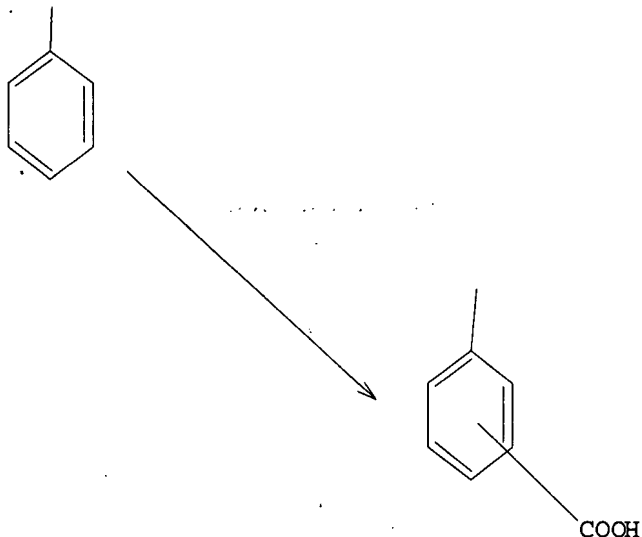
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L1 STRUCTURE UPLOADED

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L1 HAS NO ANSWERS

L1 STR



Structure attributes must be viewed using STN Express query preparation.

=> s l full

L2 47917 L

=> s l1 full

FULL SEARCH INITIATED 15:07:08 FILE 'CASREACT'

SCREENING

SCREENING COMPLETE - 493772 REACTIONS TO VERIFY FROM 51555 DOCUMENTS

74.8% DONE 369530 VERIFIED 24402 HIT RXNS 4230 DOCS

100.0% DONE 493772 VERIFIED 33924 HIT RXNS 5968 DOCS

SEARCH TIME: 00.00.45

L3 5968 SEA SSS FUL L1 (33924 REACTIONS)

=> s l3 and (co or carbon monoxide)

38379 CO

42831 CARBON

5530 MONOXIDE

5077 CARBON MONOXIDE

(CARBON(W) MONOXIDE)

L4 460 L3 AND (CO OR CARBON MONOXIDE)

=> s l4 and oxygen

16004 OXYGEN

L5 47 L4 AND OXYGEN

=> s l5 and py<2003

486663 PY<2003

L6 26 L5 AND PY<2003

=> s heteropolyacid and l4

207 HETEROPOLYACID

L7 0 HETEROPOLYACID AND L4

=> s heteropoly acid and l4

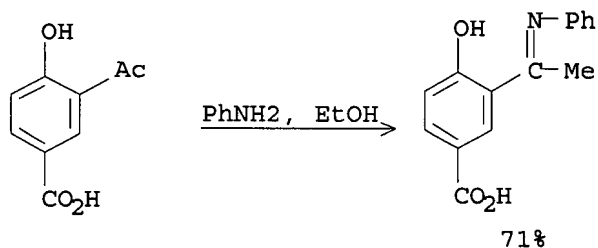
1212 HETEROPOLY
212986 ACID
458 HETEROPOLY ACID
(HETEROPOLY (W) ACID)

L8 0 HETEROPOLY ACID AND L4

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L6 ANSWER 1 OF 26 CASREACT COPYRIGHT 2007 ACS on STN

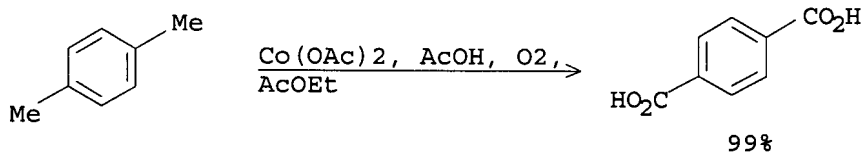
RX(2) OF 12



REF: Acta Ciencia Indica, Chemistry, 28(3), 131-134; 2002
CON: 3 hours, reflux

L6 ANSWER 2 OF 26 CASREACT COPYRIGHT 2007 ACS on STN

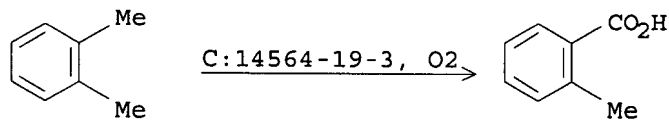
RX(1) OF 1



REF: S. African, 9707603, 23 Feb 1998
NOTE: optimization study
CON: STAGE(1) 80 deg C; 2 hours, 80 deg C

L6 ANSWER 3 OF 26 CASREACT COPYRIGHT 2007 ACS on STN

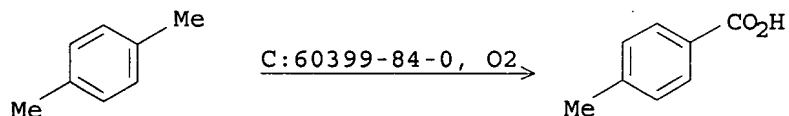
RX(2) OF 4



REF: Huaxue Yanjiu Yu Yingyong, 14(2), 178-181; 2002
CON: 125 deg C, 0.5 MPa

L6 ANSWER 4 OF 26 CASREACT COPYRIGHT 2007 ACS on STN

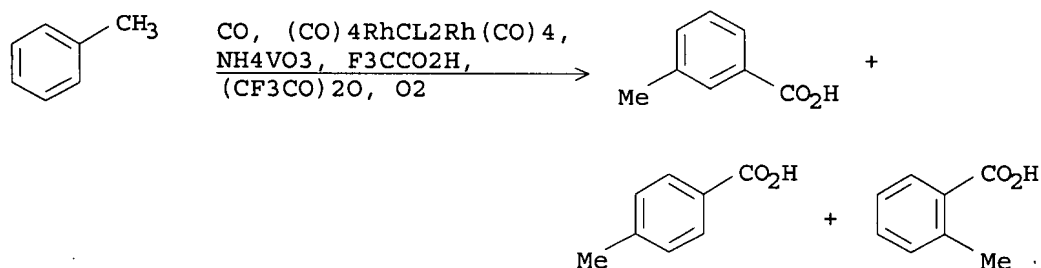
RX(1) OF 1



REF: Fenzi Cuihua, 16(2), 81-86; 2002

L6 ANSWER 5 OF 26 CASREACT COPYRIGHT 2007 ACS on STN

RX(2) OF 2

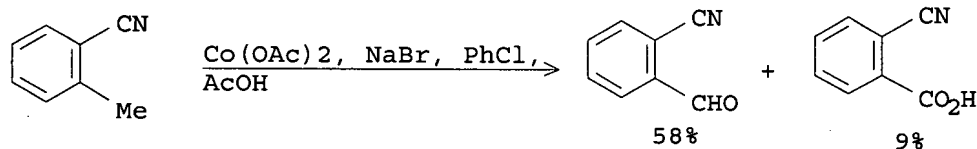


REF: Russian Journal of General Chemistry (Translation of Zhurnal Obshchei Khimii), 71(9), 1463-1466; 2001

NOTE: high pressure, thermal, optimization study, optimized on catalyst

L6 ANSWER 6 OF 26 CASREACT COPYRIGHT 2007 ACS on STN

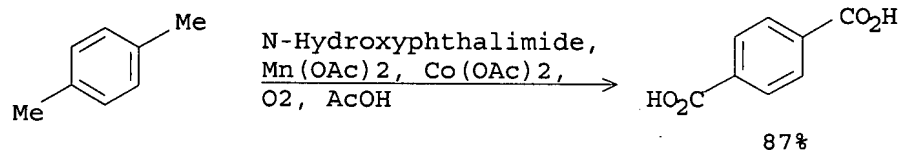
RX(1) OF 1



REF: Chinese Journal of Chemistry, 20(1), 76-78; 2002

L6 ANSWER 7 OF 26 CASREACT COPYRIGHT 2007 ACS on STN

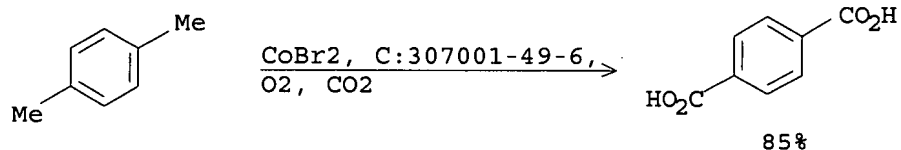
RX(6) OF 9



REF: Jpn. Kokai Tokkyo Koho, 2001253838, 18 Sep 2001

L6 ANSWER 8 OF 26 CASREACT COPYRIGHT 2007 ACS on STN

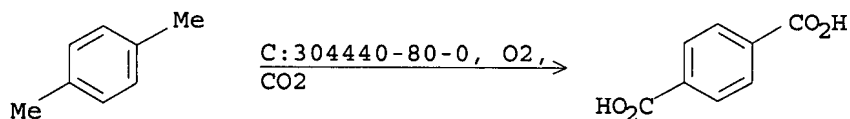
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REF: Jpn. Kokai Tokkyo Koho, 2000319221, 21 Nov 2000

L6 ANSWER 9 OF 26 CASREACT COPYRIGHT 2007 ACS on STN

RX(3) OF 3

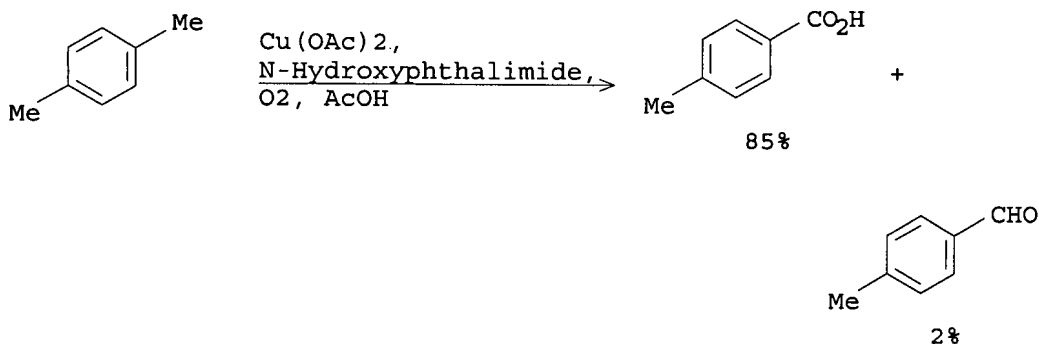


REF: Chorinkai Saishin Gijutsu, 4,, 72-76; 2000

NOTE: SUPERCRIT. CO2; OTHER CO CATALYSTS GAVE LOWER CONVERSIONS

L6 ANSWER 10 OF 26 CASREACT COPYRIGHT 2007 ACS on STN

RX(28) OF 40



REF: Catalysis Surveys from Japan, 3(1), 27-35; 1999

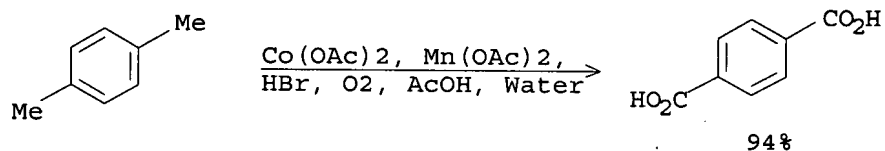
NOTE: radical oxidn.

L6 ANSWER 11 OF 26 CASREACT COPYRIGHT 2007 ACS on STN

RX(5) OF 7 - REACTION DIAGRAM NOT AVAILABLE

L6 ANSWER 12 OF 26 CASREACT COPYRIGHT 2007 ACS on STN

RX(1) OF 1

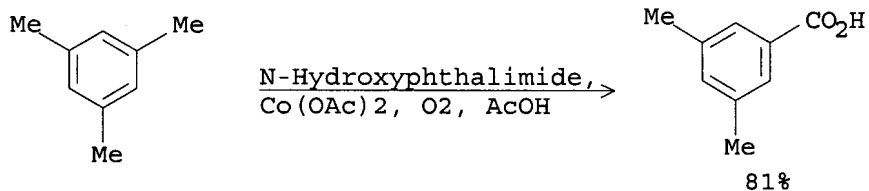


REF: Eur. Pat. Appl., 818433, 14 Jan 1998

NOTE: 190.degree., optimized combination of solvent vol. and xylene feed time to give high product quality

L6 ANSWER 13 OF 26 CASREACT COPYRIGHT 2007 ACS on STN

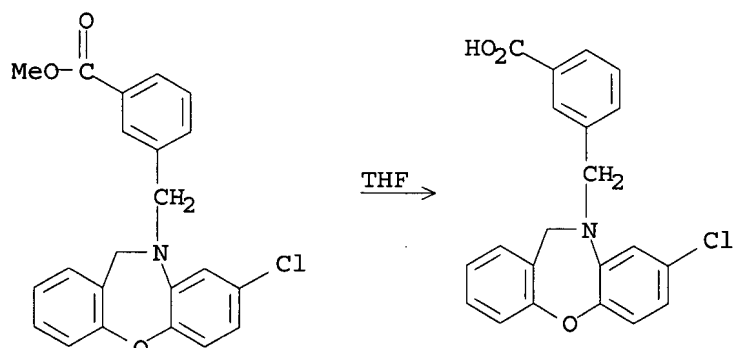
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REF: Journal of Organic Chemistry, 62(20), 6810-6813; 1997

L6 ANSWER 14 OF 26 CASREACT COPYRIGHT 2007 ACS on STN

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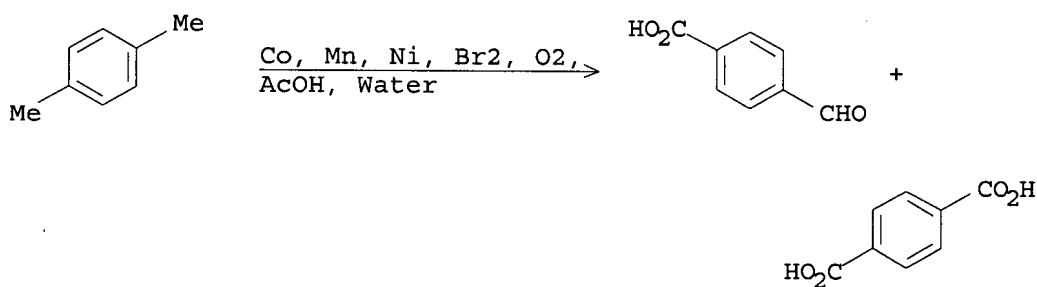


REF: U.S., 5420270, 30 May 1995

NOTE: 12 H, 20.deg., HYDROXIDE

L6 ANSWER 15 OF 26 CASREACT COPYRIGHT 2007 ACS on STN

RX(1) OF 3

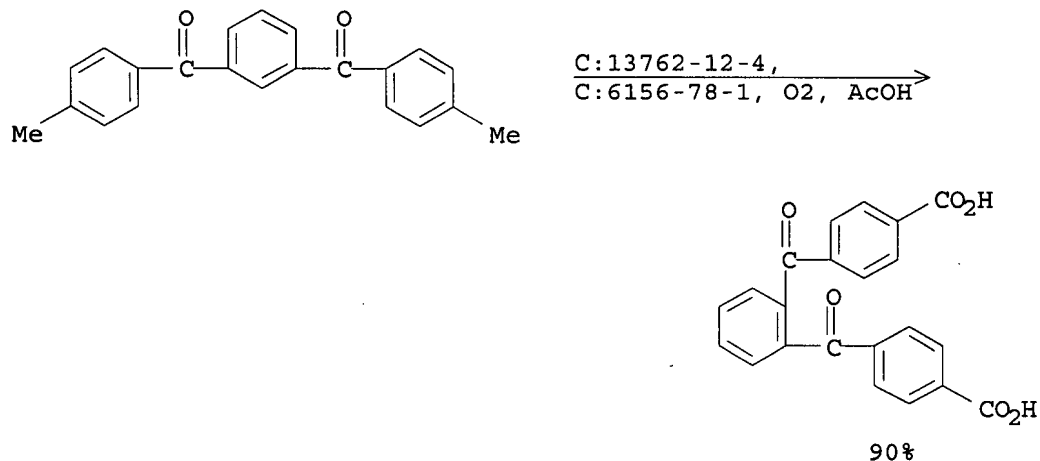


REF: PCT Int. Appl., 9509143, 06 Apr 1995

NOTE: 98% OVERALL(25 PPM RCHO); (2% WATER)

L6 ANSWER 16 OF 26 CASREACT COPYRIGHT 2007 ACS on STN

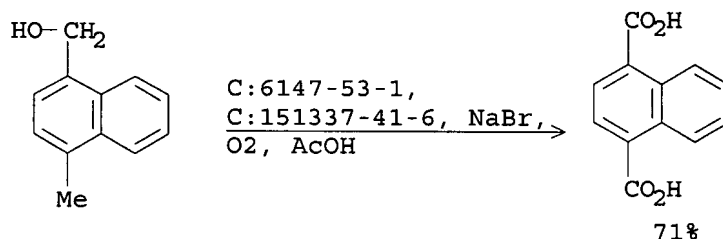
RX(1) OF 4



REF: Jpn. Kokai Tokkyo Koho, 05339204, 21 Dec 1993, Heisei
NOTE: 155-160.degree.; oxygen partial pressure 0.1-0.8 kg/cm² (1-6% oxygen); 20 kg/cm²

L6 ANSWER 17 OF 26 CASREACT COPYRIGHT 2007 ACS on STN

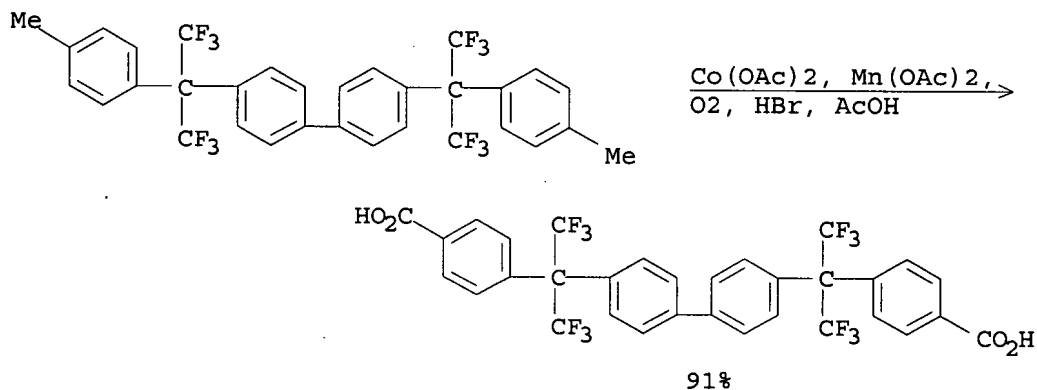
RX(3) OF 9



REF: Jpn. Kokai Tokkyo Koho, 05163198, 29 Jun 1993, Heisei
NOTE: 100.degree.

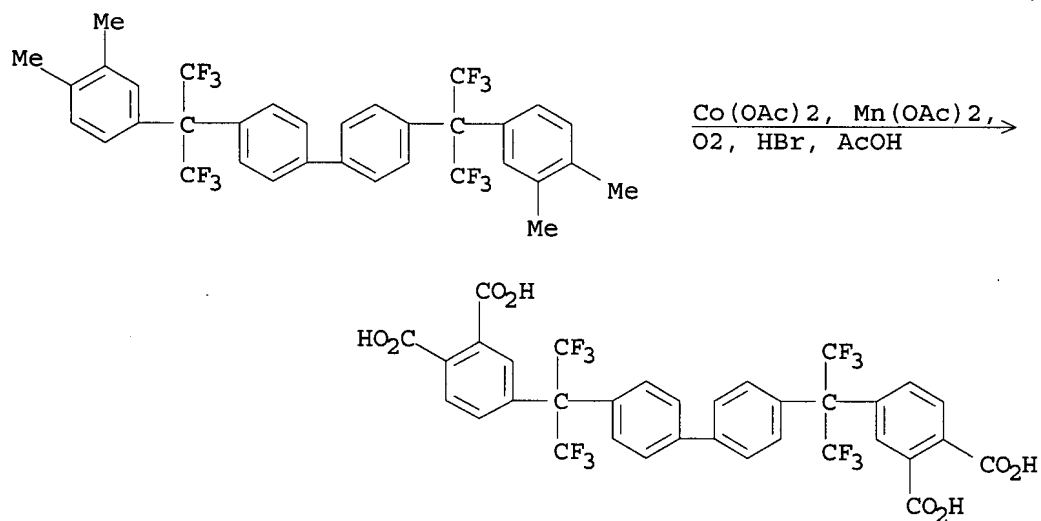
L6 ANSWER 18 OF 26 CASREACT COPYRIGHT 2007 ACS on STN

RX(1) OF 1



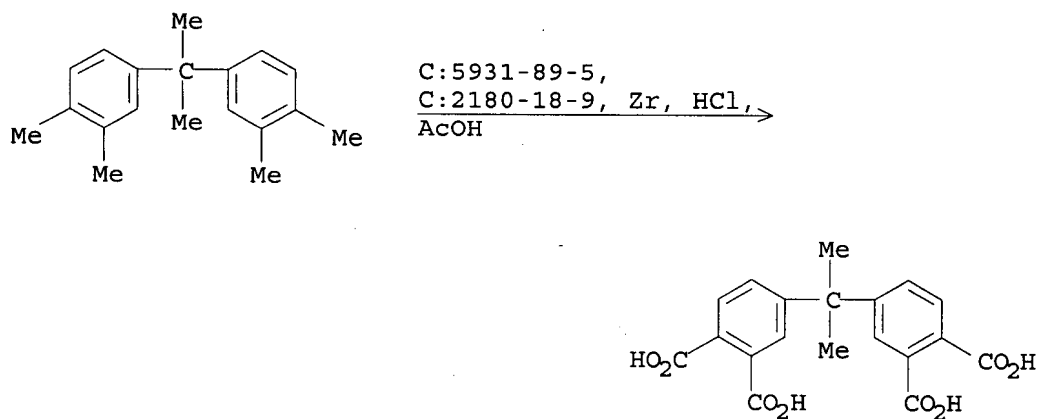
REF: Ger. Offen., 4020185, 02 Jan 1992

RX(1) OF 3



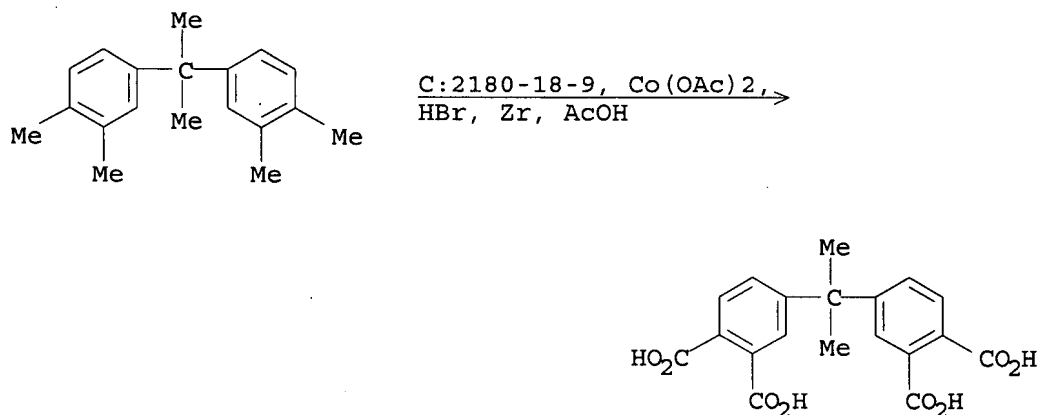
REF: Eur. Pat. Appl., 463556, 02 Jan 1992

RX(1) OF 1



REF: Eur. Pat. Appl., 443856, 28 Aug 1991

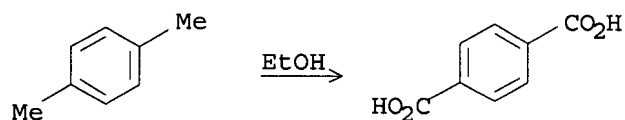
RX(1) OF 1



REF: U.S., 5028737, 02 Jul 1991

L6 ANSWER 22 OF 26 CASREACT COPYRIGHT 2007 ACS on STN

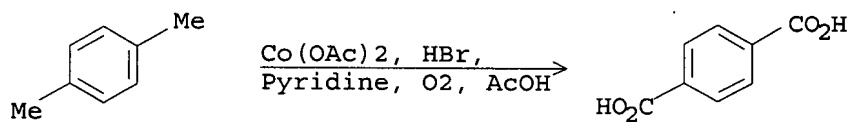
RX(1) OF 1



REF: U.S., 4906772, 06 Mar 1990

L6 ANSWER 23 OF 26 CASREACT COPYRIGHT 2007 ACS on STN

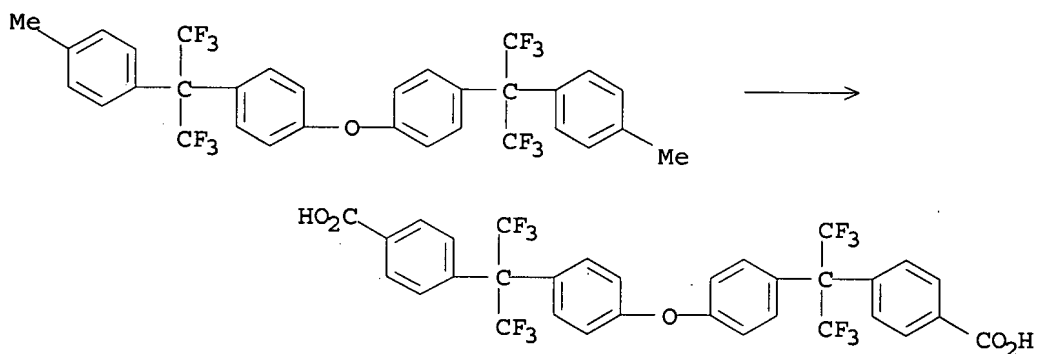
RX(1) OF 1



REF: Journal of Molecular Catalysis, 57(1), 105-12; 1989

L6 ANSWER 24 OF 26 CASREACT COPYRIGHT 2007 ACS on STN

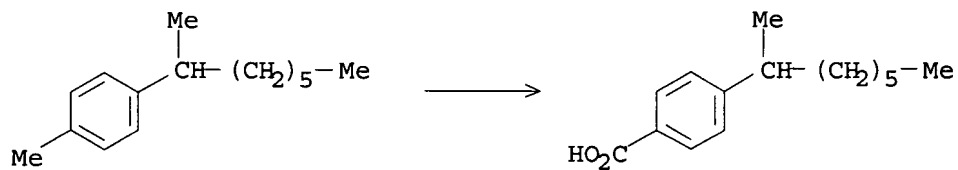
RX(1) OF 6



77%

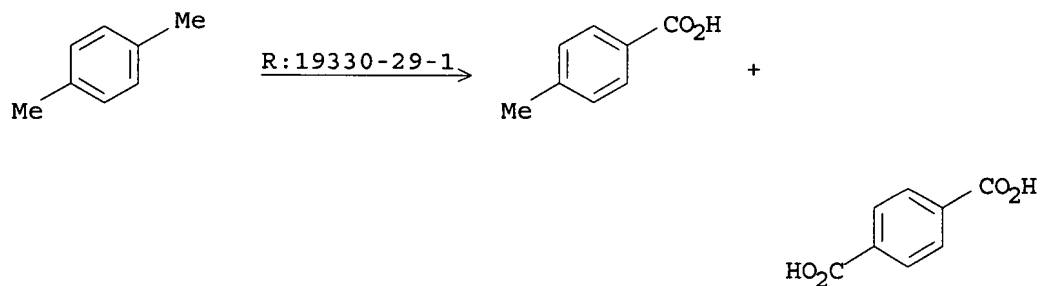
REF: Eur. Pat. Appl., 317884, 31 May 1989

RX(1) OF 1



REF: Jpn. Kokai Tokkyo Koho, 60142942, 29 Jul 1985, Showa

RX(1) OF 1



REF: Zhurnal Obshchei Khimii, 29,, 158-65; 1959

NOTE: Classification: Benzylic oxidation; # Conditions: O₂ Co(OEt)₂; #
Comments: a study of the kinetics of the reaction

ILE 'CASREACT' ENTERED AT 15:06:21 ON 09 MAY 2007

L1 STRUCTURE UPLOADED

L2 47917 S L FULL

L3 5968 S L1 FULL

L4 460 S L3 AND (CO OR CARBON MONOXIDE)

L5 47 S L4 AND OXYGEN

L6 26 S L5 AND PY<2003

L7 0 S HETEROPOLYACID AND L4

L8 0 S HETEROPOLY ACID AND L4

=> s l3 and (carbon monoxide)

42831 CARBON

5530 MONOXIDE

5077 CARBON MONOXIDE

(CARBON(W) MONOXIDE)

L9 52 L3 AND (CARBON MONOXIDE)

=> s l9 and oxygen

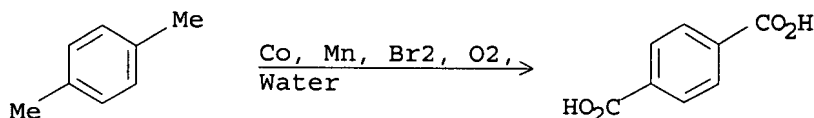
16004 OXYGEN

L10 3 L9 AND OXYGEN

=> d 1-3

L10 ANSWER 1 OF 3 CASREACT COPYRIGHT 2007 ACS on STN

RX(1) OF 1



REF: PCT Int. Appl., 2006096311, 14 Sep 2006

NOTE: Titanium agitated autoclave was used, alternative preparations gave higher concentrations of byproducts, optimization study, other products also detected, thermal

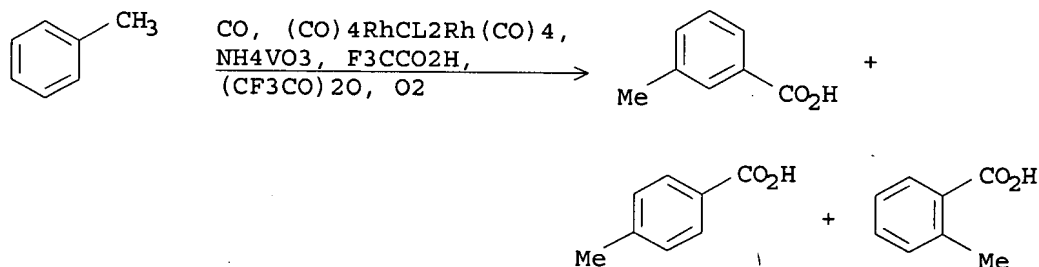
CON: STAGE(1) room temperature -> 152 deg C, 70 psi; 8 hours, 152 deg C, 70 psi; 20 hours, 152 deg C, 70 psi

L10 ANSWER 2 OF 3 CASREACT COPYRIGHT 2007 ACS on STN

RX(5) OF 31 - REACTION DIAGRAM NOT AVAILABLE

L10 ANSWER 3 OF 3 CASREACT COPYRIGHT 2007 ACS on STN

RX(2) OF 2



REF: Russian Journal of General Chemistry (Translation of Zhurnal Obshchei Khimii), 71(9), 1463-1466; 2001

NOTE: high pressure, thermal, optimization study, optimized on catalyst

=> d his

(FILE 'HOME' ENTERED AT 15:06:00 ON 09 MAY 2007)

FILE 'CASREACT' ENTERED AT 15:06:21 ON 09 MAY 2007

L1 STRUCTURE UPLOADED
L2 47917 S L FULL
L3 5968 S L1 FULL
L4 460 S L3 AND (CO OR CARBON MONOXIDE)
L5 47 S L4 AND OXYGEN
L6 26 S L5 AND PY<2003
L7 0 S HETEROPOLYACID AND L4
L8 0 S HETEROPOLY ACID AND L4
L9 52 S L3 AND (CARBON MONOXIDE)
L10 3 S L9 AND OXYGEN

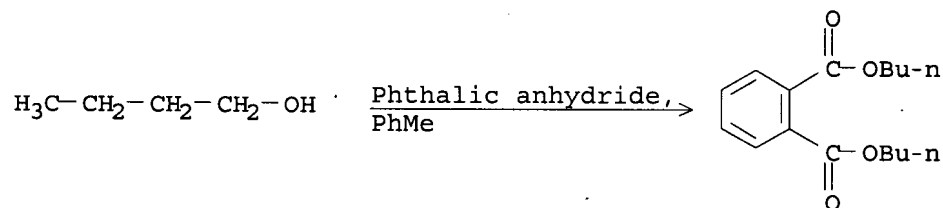
=> s heteropolyacid and l3

207 HETEROPOLYACID
L11 1 HETEROPOLYACID AND L3

=> d

L11 ANSWER 1 OF 1 CASREACT COPYRIGHT 2007 ACS on STN

RX(1) OF 31



REF: Journal of Molecular Catalysis A: Chemical, 200(1-2), 105-110; 2003

NOTE: % conversion increases with use of a heteropolyacid catalysts

CON: 240 minutes, reflux

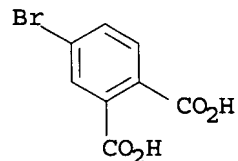
=> s heteropoly acid and l3

1212 HETEROPOLY
212986 ACID
458 HETEROPOLY ACID
(HETEROPOLY(W) ACID)
L12 5 HETEROPOLY ACID AND L3

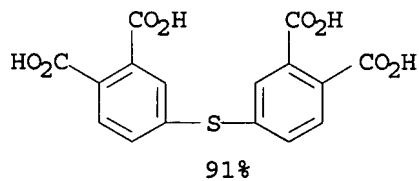
=> d 1-5

L12 ANSWER 1 OF 5 CASREACT COPYRIGHT 2007 ACS on STN

RX(1) OF 6



$\xrightarrow{\text{Na}_2\text{S}, \text{Butyrolactone}}$



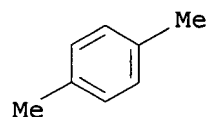
REF: Jpn. Kokai Tokkyo Koho, 2003146964, 21 May 2003

NOTE: alternative prepn. available

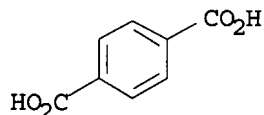
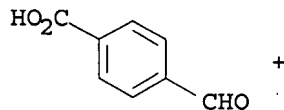
CON: 8 hours, 200 - 205 deg C

L12 ANSWER 2 OF 5 CASREACT COPYRIGHT 2007 ACS on STN

RX(5) OF 8



$\xrightarrow[\text{MeCN}]{\text{C:13718-26-8, O}_2, \text{DMSO, ClCH}_2\text{CH}_2\text{Cl}}$

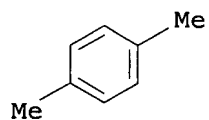


REF: Eur. Pat. Appl., 1205462, 15 May 2002

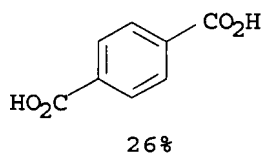
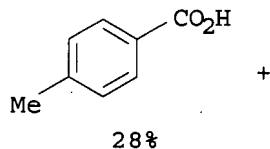
NOTE: alternative prepn. shown

L12 ANSWER 3 OF 5 CASREACT COPYRIGHT 2007 ACS on STN

RX(1) OF 1



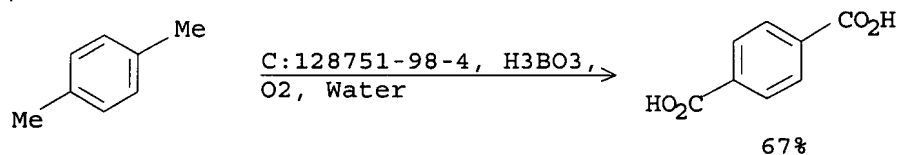
$\xrightarrow{\text{C:14284-93-6, O}_2}$



REF: Jpn. Kokai Tokkyo Koho, 11001447, 06 Jan 1999, Heisei

L12 ANSWER 4 OF 5 CASREACT COPYRIGHT 2007 ACS on STN

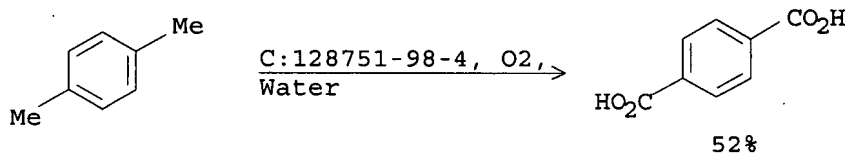
RX(1) OF 1



REF: Jpn. Kokai Tokkyo Koho, 09169694, 30 Jun 1997, Heisei

L12 ANSWER 5 OF 5 CASREACT COPYRIGHT 2007 ACS on STN

RX(1) OF 1



REF: Jpn. Kokai Tokkyo Koho, 08053391, 27 Feb 1996, Heisei

(FILE 'HOME' ENTERED AT 15:06:00 ON 09 MAY 2007)

FILE 'CASREACT' ENTERED AT 15:06:21 ON 09 MAY 2007

L1	STRUCTURE UPLOADED
L2	47917 S L FULL
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L8	0 S HETEROPOLY ACID AND L4
L9	52 S L3 AND (CARBON MONOXIDE)
L10	3 S L9 AND OXYGEN
L11	1 S HETEROPOLYACID AND L3
L12	5 S HETEROPOLY ACID AND L3

=>